Deteksi Bakteri *Coliform* dan S*almonella* sp. dari Sumber Air pada Pengolahan Tempe di Kecamatan Sidorejo, Salatiga

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The Detection of *Coliform* and *Salmonella* Bacteria sp. at water Resource by the Tempe Factory in District of Sidorejo, Salatiga

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Abstrak

Pembuatan tempe secara tradisional yang belum memenuhi standar *Good Manufacturing Practice* dapat menyebabkan tempe terkontaminasi mikroorganisme patogen. Salah satu yang belum memenuhi standar itu adalah sumber air yang dipergunakan dalam proses fermentasi tempe. Sumber air yang tercemar itu dapat diketahui dari pemeriksaan mikroorganisme patogen dalam air cucian dan perebusan kedelai. Penelitian ini bertujuan untuk mengetahui cemaran mikroorganisme patogen yang terjadi dalam air cucian dan perebusan kedelai yang dipergunakan dalam proses fermentasi tempe oleh pengrajin tempe tradisional di Kecamatan Sidorejo, Salatiga, Jawa Tengah. Sampel air cucian dan perebusan kedelai diambil secara acak dari sejumlah pengrajin tempe.

Cemaran mikroorganisme patogen diuji dengan Uji Dugaan (*Presumptive Test*) dan Uji Penegasan (*Confirmative Test*), serta deteksi bakteri *Salmonella* sp. Hasil uji ini dibandingkan dengan standar tempe SNI 3144-2015. Hasil penelitian menunjukkan bahwa baik air cucian maupun perebusan kedelai belum memenuhi standar, masing-masing dalam air cucian terdapat 11−150 APM/mL dan dalam air perebusan terdapat 28−36 APM/mL *Coliform*. Air perebusan kedelai secara positif mengandung *Salmonella* sp. Kesimpulan penelitian adalah proses pembuatan tempe tradisional di Kecamatan Sidorejo belum memenuhi standar tempe SNI 3144-2015 dievaluasi dari sumber air yang dipergunakan, sehingga perlu pembinaan, pelatihan, dan pengawasan untuk melakukan proses pembutan tempe yang *Good Manufacturing Practice.*

Kata kunci : tempe kedelai, cemaran, *Coliform*, *Salmonella* sp.

Abstract

The production of Tempe that has not met the standard of Good Manufacturing Practice can contaminate the Tempe with pathogenic microorganisms. One that has not met the standard is the water source that is used in fermentation process of Tempe. The source of the contaminated water can be detected from the examination of pathogenic microorganisms in the washing and boiling water of soybeans. This study aims to determine the contamination of pathogenic microorganisms that occur in washing and boiling water of soybeans that are used in the process of fermentation by traditional Tempe craftsmen in district of Sidorejo, Salatiga, Central Java. Samples of washing and boiling water of soybeans were randomly picked from a number of Tempe craftsmen. The contamination of the pathogenic microorganisms is tested using Presumptive Test and Confirmative Test, also the detection of Salmonella sp. The results of the test are compared with the standard of Tempe SNI 3144-2015. The result showed that both the washing and boiling water of soybeans did not meet the standard, Each in the washing water is found 11-15 APM/mL and in boiling water is found 28-36 APM/mL of Coliform. The boiling water of soybeans positively contains Salmonella sp. The conclusion of the research is that the process of making traditional Tempe in district of Sidorejo has not fulfilled the standard of Tempe SNI 3144-2015 evaluated from the source of water used, so it needs couching, training, and supervision in the process of making Tempe that meet the standard of Good Manufacturing Practice.

Key Words : Tempe, Soybean, Contamination, *Coliform*, *Salmonella* sp.